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IS 12097 (1994): Classification and selection of drilling rigs for waterwell drilling [MED 21: Diamond Core and Waterwell Drilling]

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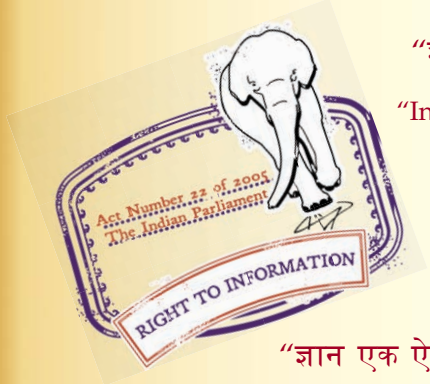

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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IS 12097 : 1994
(Reaffirmed 1999)

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(पहला पुनरीक्षण)

Indian Standard

CLASSIFICATION AND SELECTION OF DRILLING RIGS FOR WATER WELL DRILLING

(First Revision)

UDC 622·242·2 : 628·112·2

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

February 1994

Price Group 1

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Diamond Core and Water Well Drilling Sectional Committee had been approved by the Heavy Mechanical Engineering Division Council.

This Indian Standard was first published in 1987. In this revision on the basis of the experience gained so far in the field, the drilling rigs have been classified on the basis of size of hole and size of drill rod, tool weight used. This Indian Standard is also recommendatory guidance for the selection of drilling rig for different types of formations.

Indian Standard

CLASSIFICATION AND SELECTION OF DRILLING RIGS FOR WATER WELL DRILLING

(First Revision)

1 SCOPE

This standard specifies the classification and recommendations for selection of drilling rigs for drilling of water wells and bore holes.

1.1 The recommendations for selection of drilling rigs include the suitability aspects of different types of drilling rigs and their proper selection for drilling water wells and bore holes in different geological formations.

2 TYPE

The following types of drilling rigs are generally used for drilling of water wells and bore holes:

a) Percussion (cable tool);

b) Rotary;

1) Direct circulation, and

2) Reverse circulation;

c) Down-the-hole (DTH);

d) Combination (Rotary-cum-percussion); and

e) DTH-cum-rotary.

3 CLASSIFICATION AND SELECTION

The classification and selection of drilling rigs into light, medium and heavy duty as specified below is based on the diameter of the hole, depth of the hole, size of the drill rods, tool weight, and formation to be encountered during drilling:

Classification and Selection of Drilling Rigs

Sl No.	Type of Drilling Rig	Classification	Dia of Hole mm	Depth of Hole m	Size of Drill Rods/Tool Weight
a)	Percussion (cable tool): Suitable for drilling in semiconsolidated hard and bouldery formation	Light	200	Up to 100	Tool weight up to 1 000 kg
		Medium	200	Up to 200	Tool weight 1 001 to 2 000 kg
		Heavy	200	Above 200	Tool weight 2 001 kg and above
b)	1) Rotary-direct circulation: Suitable for drilling in hard abrasive alluvial, soil, clay shell, etc, formation	Light	200	Up to 250	Up to 73 mm
		Medium	200	Up to 450	Up to 89 mm
		Heavy	200	Above 450	89 mm and above
	2) Rotary reverse circulation: Suitable for drilling in soft alluvial, clay, small gravel and cobble formulations	Medium	500/600	Up to 170	150 mm
		Heavy	600/700	Up to 200	150 mm
c)	Down the hole (DTH Hammer): Suitable for drilling in hard rocks, like granite, gnessis, traps, basaltic formations	Light	114	Up to 50	76 mm
		Medium	150	Up to 170	89/114 mm
		Heavy	200	Above 170	114 mm
d)	Combination (Rotary-cum-percussion): Suitable for drilling in alluvial, clay hard and bouldery formations	Medium			
		Rotary	200	Up to 300	Up to 89 mm
		Percussion	300	Up to 170	Tool weight 1 001 to 2 000 kg
		Heavy			
		Rotary	200	Above 300	Up to 89 mm
		Percussion	450	Above 170	Tool weight 2 001 kg and above
e)	DTH-cum-Rotary: Suitable for drilling in soft alluvial over burden and hard rock formation	Medium			
		DTH	150	Up to 170	89/114 mm
		Rotary	250	Up to 50	114 mm
		Heavy			
		DTH	150	Above 170	114 mm
		Rotary	250	Above 50	114 mm

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